

Listing of Claims

IN THE CLAIMS:

The following listing of claims is intended to supercede all previously filed listings of claims. Changes are shown with deletions in ~~strikethrough~~ and additions underlined.

Claims 1-8 (Cancelled).

Claim 9 (Currently Amended). A method for forming a seal on a cable having a core material, including the steps of:

removing an amount of an overlayer on the core material sufficient to expose a surface to which a bonding layer may be applied;

creating a bonding layer by plating the exposed surface with a metal to form a metal-plated surface;

applying a bonding agent to at least a portion of the metal after the metal has been plated on to the exposed surface, the bonding agent being applied by:

placing a region of the cable into a mold; and

applying epoxy to a region of the optical fiber disposed in a mold for a sufficient time to bond the epoxy to at least a portion of the metal-plated surface.

Claim 10 (Cancelled).

Claim 11 (Previously Presented). The method of claim 9, wherein the step of plating the exposed surface includes applying a layer including at least one of chromium, nickel and gold.

Claim 12 (Previously Presented). The method of claim 9, wherein the step of applying a bonding agent includes the step of applying epoxy to the metal-plated surface.

Claim 13 (Previously Presented). The method of claim 9, wherein:

the cable includes a plurality of optical fibers, each having a silica core; and
the step of plating the exposed surface includes the step of applying at least one of chromium, nickel and gold to each silica core in the cable.

Claim 14 (Cancelled).

Claim 15 (Currently Amended). An optical fiber cable, including:

a plurality of optical fibers each having a silica core, the cable having a first region wherein at least some of the optical fibers have substantially no coating, and having a third region wherein at least some of the optical fibers have a second coating;

a metal-plating applied to at least a portion of the second region;

an epoxy seal bonded to the metal plating of at least some of the optical fibers in the second region and extending partly into the first region and partly into the second region;

a first conductive tube surrounding at least a portion of the first region; a second conductive tube surrounding at least a portion of the third region; and

a conductive housing surrounding at least a portion of the second region,
including the epoxy seal;

wherein the first conductive tube, second conductive tube and conductive housing
form a continuous conductive path.

Claim 16 (Cancelled).

Claim 17 (Currently Amended). The optical fiber cable of claim 15~~claim 16~~, further including an insulating sleeve over each of the first conductive tube, second conductive tube and conductive housing.

Claim 18 (Original). The optical fiber cable of claim 17, wherein the insulating sleeve includes polyethylene.

Claim 19 (Currently Amended). A system for transmission of data between a first environment having a low relative pressure and a second environment having a high relative pressure, including:

a communications cable including a plurality of optical fibers each having a silica core, the cable having a first region wherein at least some of the optical fibers have a first coating, having a second region wherein at least some of the optical fibers have substantially no coating, and having a third region wherein at least some of the optical fibers have a second coating;

a metal plating applied to at least a portion of the second region;

an epoxy seal ~~bonded to being molded about~~ the metal plating of at least some of the optical fibers in the second region and extending partly into the first region and partly into the second region, ~~after at least a portion of the second region has been placed in a mold for a sufficient time to bond the epoxy to the metal plating of at least some of the optical fibers;~~ and

at least one electronics module positioned within the first environment and coupled to a portion of the optical fibers in the first region.

Claim 20 (Previously Presented). The transmission system of claim 19, further including:

a first conductive tube surrounding at least a portion of the first region;

a second conductive tube surrounding at least a portion of the third region; and

a conductive housing surrounding at least a portion of the second region, including the epoxy seal;

wherein the first conductive tube, second conductive tube and conductive housing form a continuous conductive path.

Claim 21 (Previously Presented). The transmission system of claim 20, further including a sleeve over each of the first conductive tube, second conductive tube and conductive housing.

Claim 22 (Previously Presented). The transmission system of claim 21, wherein the sleeve includes polyethylene.

Claim 23 (Currently Amended). The cable seal of claim 25~~claim 1~~, wherein a metal is applied to the optical fiber using chemical vapor deposition to produce the metal-plated optical fiber.

Claim 24 (Previously Presented). The method of claim 9, wherein the step of plating the exposed surface with a metal to form a metal-plated surface includes plating the exposed surface using a chemical vapor deposition process.

Claim 25 (New). A cable seal configured to seal a cable against fluid passage in an environment wherein a pressure differential exists between a first region of the environment and a second region of the environment, including:

an optical fiber having at least a portion of a cover substantially removed;

a metal-plating applied to the optical fiber having at least a portion of the cover substantially removed thereby providing a metal-plated optical fiber; and

a bonding agent molded about the metal plated optical fiber, thereby creating a seal about the metal-plated optical fiber, the metal-plated optical fiber being disposed within a mold for sufficient time to bond the epoxy for a sufficient time to bond the epoxy to at least a portion of the metal-plated optical fiber..

Claim 26 (New). The cable seal of claim 25, wherein the optical fiber is plated with at least one of chromium, nickel and gold.

Claim 27 (New). The cable seal of claim 25, wherein the bonding agent includes epoxy.

Claim 28 (New). The cable seal of claim 25, wherein the epoxy is bonded to the metal-plated optical fiber.

Claim 29 (New). The cable seal of claim 25, wherein the cable seal passes through a

conductive tube.

Claim 30 (New). The cable seal of claim 29, wherein the conductive tube is covered with an insulative material such that the cable seal is disposed within the conductive tube covered with an insulative material.